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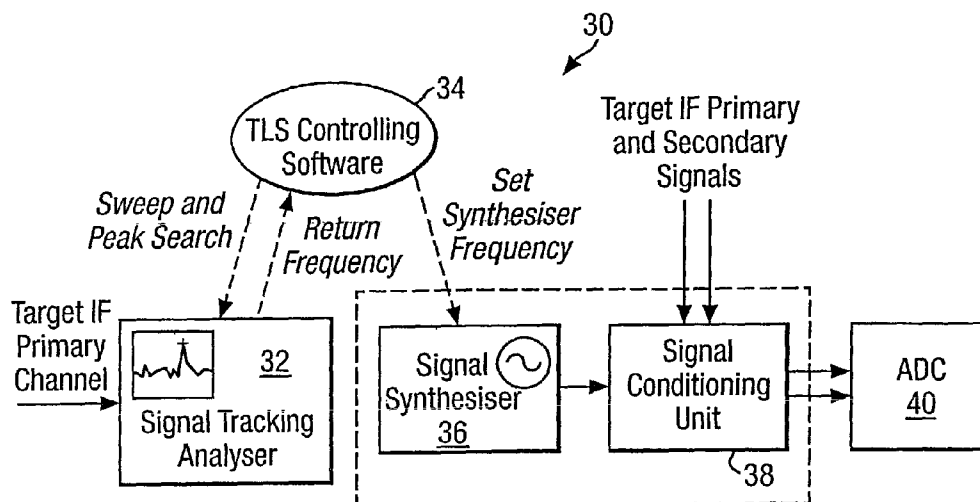
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(54) Title: METHOD AND APPARATUS FOR LOCATING THE SOURCE OF AN UNKNOWN SIGNAL



(57) Abstract: A method of locating the source of an unknown signal of varying frequency received by receive antennas (16, 18) via relay satellites (12, 14) involves downconversion of received signals to a first intermediate frequency (IF) and band-limiting the downconverted signals. The band-limited signals are constrained to lie within a prearranged acquisition signal bandwidth by adjustment of local oscillator (LO) downconversion frequency to counteract frequency change in the unknown signal. Downconverted signals are offset in time relative to one another using trial values of differential time offset and their correlation is determined for each trial value to provide actual time offset. Compensation is provided for change in correlation phase angle, which results from signals being downconverted experiencing different LO frequencies during the time interval of the trial offset.



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